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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,242	07/14/2003	August W. Gutheim	210_591	5829

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EXAMINER

NORMAN, MARC E

ART UNIT PAPER NUMBER

3744

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/619,242

Applicant(s)

GUTHEIM ET AL.

Examiner

Marc E. Norman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7, 8, 10-17, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Dormer et al. (U.S. Patent 5,768,901).

As per claim 1, Dormer et al. discloses compressor 12, condenser 22, expansion valve 32, and subcooler 30.

As per claim 2, Dormer et al. discloses the compressor including two sections (LS and HS), each having a suction inlet (Figure 1).

As per claim 3, Dormer et al. discloses the compressor being a multi-cylinder compressor and each of the two sections being driven by separate cylinder groups (column 1, line 48 – column 2, line 9).

As per claim 4, Dormer et al. discloses one section being driven by multiple cylinders (LS-1 and LS-2) and the other by a single cylinder HS.

As per claim 5, Dormer et al. discloses the circuit containing subcooler 30 being driven by single cylinder HS.

As per claim 7, Dormer et al. discloses isolation valve SV-4.

As per claim 8, Dormer et al. discloses subcooler expansion valve 34.

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As per claim 10, Dormer et al. discloses first suction inlets to compressor 12 (Figure 1), subcooler 30, and providing for the flow of the first portion of refrigerant (24-1) from the subcooler to the second inlet (Figure 1).

As per claim 11, Dormer et al. discloses delivering refrigerant from expansion valve 32 to the first suction inlet (via line 26, evaporator 20, and line 16).

As per claim 12, Dormer et al. discloses multiple cylinders (LS-1 and LS-2) to compress the refrigerant being delivered to the first suction inlet.

As per claim 13, Dormer et al. discloses single cylinder HS compressing the refrigerant delivered to the second inlet.

As per claim 14, Dormer et al. discloses 12 having first and second sections (LS and HS), condenser 22, expansion valve 32, evaporator 20, and subcooler 30 fluidly connected to compressor second section HS.

As per claim 15, Dormer et al. discloses subcooler 30 selectively providing refrigerant to the second section (according to operation of SV-4, see column 3, lines 54-67).

As per claim 16, Dormer et al. discloses the first and second sections having separate inlets (Figure 1).

As per claim 17, Dormer et al. discloses the first section having multiple cylinders (LS-1 and LS-2).

As per claim 19, Dormer et al. discloses the second section having a single cylinder HS.

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 6 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dormer et al. in view of Lifson et al. (U.S. Patent 6,058,729).

As per claims 6 and 18, Dormer et al. does not teach an unloading circuit. Lifson et al. teaches a refrigeration system comprising both a subcooling system and an unloading circuit (including unloader valve 36, see column 3, lines 47-55). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the unloader of Lifson et al. to the system of Dormer et al. for the purpose of minimizing the load on the compressor and minimizing the amount of fluid leaving the compressor (Lifson et al., column 3, lines 49-51).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dormer et al.

As per claim 9, Dormer et al. does not teach a check valve between the subcooler and the second suction inlet. Official notice is taken that compressor inlet check valves are common and well known in the art and that it would have been obvious to one of ordinary skill in the art at the

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time the invention was made to apply a check valve at the second suction inlet of the compressor for the purpose of preventing refrigerant backflow when the compressor is stopped.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc E. Norman whose telephone number is 703-305-2711. The examiner can normally be reached on Mon.-Fri., 8:00-5:30, with first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on 703-308-2597. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MN



**MARC NORMAN
PRIMARY EXAMINER**